NONVERBAL COMMUNICATIVE SKILLS USED WITH PEERS BY DEAF AND HEARING FIVE-YEAR-OLD CHILDREN

by

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This study was planned as a means of gaining an increased understanding of nonverbal communicative skills used by preschool children. The purpose of the study was to determine similarities and differences between deaf and hearing five-year-old children during their inside and outside free play. Child-centered leadership in free play was of interest rather than group situations structured and directed by adults. The writer assumed that five-year-old children use a variety of nonverbal communicative skill; five-year-old children tend to differ in the ways in which they use nonverbal communicative skills.

Included in the study were two groups of five children each. The deaf children were students of the Eastern North Carolina School for the Deaf in Wilson, North Carolina. The five deaf children were considered to be normal except for their deafness. The five hearing children, considered to be normal five-year-old children, were attending the Parkway Baptist Church Kindergarten. The two groups were matched according to age and sex.

Eight 15 minute observations were made on each of the ten children. Four observations were during inside free play and four during outside free play. The play period lasted for one hour and the order of observation was randomized for each group due to the factors of fatigue and the attention span of this age child.

Each time the child being observed used a nonverbal communicative skill, it was recorded on the observation record. The nonverbal skills were classified either as body, facial, feet, hand, head, or shoulder expressions. Each type of nonverbal communicative skill was interpreted as either a response or as initiating a response.

At the conclusion of the eighty observation periods, frequency of occurrence totals were determined for each child and for each group. These totals, presented in tabular form were inside-response, inside-initiate a response, outside-response, outside-initiate a response for each of the six types of nonverbal communicative skills. The relationships between the frequencies for each of the two groups of children were presented and discussed.

When applied to the two groups observed, the present study offers support for the following statements: both groups used the same types of nonverbal communicative skills; they used the nonverbal skills to respond more frequently than to initiate a response; they used hand expressions more frequently than any other type of nonverbal skill; they used body and head expressions more frequently during outside free play than during inside free play. The deaf children used nonverbal communicative skills more frequently than did the hearing children. The deaf children used hand expressions more frequently during inside free play than during outside free play; the reverse was true of the hearing group.

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CHAPTER I

INTRODUCTION

Man has been communicating in one form or another since the beginning of his social interactions. Darwinian theory supports the view that certain emotional patterns expressed in communication are innate. Such studies as those made by Goodenough (1931) and Tervoort (1961) seem to suggest that emotions and body movements are inherently related and that consequently certain communicative expressions are innate. Other studies, particularly anthropological studies, suggest that some of these expressions are learned.

Only recently has communication become an area of investigation. The information, however, remains limited and studies concerning verbal as well as nonverbal communicative skills are scant.

Those who have worked with preschool children have recognized the pattern of development in which nonverbal skills are perhaps more predominant in communication by five-year-old children. It would seem that deaf children at this age level would depend even more on nonverbal skills to communicate with others because their inability to hear would inhibit the development of language. It would further

seem that because deaf five-year-old children have never heard the spoken word, they would rely more on nonverbal skills to communicate than would hearing children. It is important that teachers who work with deaf children understand the nature and content of nonverbal skills so that some degree of communication with the child may be established.

The Problem

This study was planned as a means of gaining an increased understanding of nonverbal communicative skills used by preschool children. From the experience of the writer, it seemed that both the deaf and hearing five-year-old children might use similar nonverbal communicative skills with differing frequencies during free play. Therefore, this study of the similarities and differences between the nonverbal communicative skills used by deaf and hearing five-year-old children was undertaken. Child-centered leadership in free play was of interest rather than group situations structured by adults.

The problem was a comparative study of the nonverbal communicative skills used with peers by a group of deaf five-year-old children and a group of hearing five-year-old children. The purpose of the study was to determine similarities and differences of nonverbal communicative skills used by deaf and hearing five-year-old children. The study was conducted at the Eastern North Carolina School for the

Deaf in Wilson, North Carolina, and the Parkway Baptist Church in Greensboro, North Carolina, during the spring semester of 1966.

Definitions

Several terms which have specific meaning in this study are defined below:

Nonverbal communicative skills comprise all the ways of expressing oneself to another person without the use of audible words. The two classifications of nonverbal communicative skills were those which were a nonverbal response, and those which nonverbally initiated a response by another person.

Body expressions refers to all the ways of nonverbally conveying a message to another person by using either the whole body or a combination of two or more parts of the body at the same time.

Facial expressions refers to all the ways of nonverbally conveying a message to another person by using the face or any of its features. Examples of facial expressions are biting, extending tongue, kissing, spitting, whistling, winking.

Feet expressions refers to the use of only the feet to convey a message to another person. Examples of feet expressions are pushing, shaking, tapping.

Hand expressions refers to the use of the hands to communicate with another person. Examples are clapping,

counting, holding hands, hands on hips, pinching, shaking fist.

Head expressions refers to the use of the head to communicate nonverbally with another person. Examples are nodding, shaking head, turning head away.

Shoulder expressions refers to the use of the shoulders for communication with another person. Examples are hunching, shoving, and shrugging.

The free play period was the period of time during which a child was permitted to move from one activity or center of interest, or from one child or group of children as he chose.

Basic Assumptions and Beliefs

The writer assumed that five-year-old children use nonverbal communicative skills; however, five-year-old children differ in the ways that they use nonverbal communicative skills.

This study was based on the following beliefs concerning five-year-old children:

1. Deaf and hearing children use the same types of skills; however, deaf children use nonverbal communicative skills more frequently than hearing children.

2. Deaf and hearing children use nonverbal communicative skills as a response more frequently than to initiate a response.

3. Deaf children use nonverbal skills to initiate a

response more frequently than do hearing children.

4. Deaf children use body expressions more frequently than any other type of nonverbal communicative skill; for deaf children, the order for using nonverbal communicative skills occurs in the following pattern: body, hand, facial, shoulder, head, and feet.

5. Hearing children use hand expressions more frequently than any other type of nonverbal communicative skill. For hearing children, the order for using nonverbal communicative skills occurs in the following pattern: hand, head, body, facial, shoulder, and feet.

Limitations of the Study

The limitations of the study were the following:

1. There were only five children in each of the two groups.

2. The free play period lasted for only one hour.

3. The children were observed in a group setting.

4. The children were accustomed to teacher direction during the free play period.

5. There were only four observations during inside free play and four during outside free play.

Review of the Literature

The available literature concerning nonverbal communication presents three major questions. Is communication learned or innate? Is the face a primary medium of

communication? Is nonverbal communication a vital component of speech? A review of the literature is given in the next three sections.

Nonverbal Communication: Learned or Innate

Several sources suggested that certain aspects of communication are innate.

The view that certain emotional patterns expressed in communication are innate is supported by Darwinian theory. Charles Darwin suggested that the origin of human speech was mouth-pantomime in which the speech organs involuntarily attempted to imitate body gestures (Johannesson, 1952, p. 5). He also postulated that certain emotions are expressed by reflexes such as rage with gritting teeth or fright with recoiling (Ruesch and Kees, 1956, p. 36). Darwinian theory also suggests that emotions and body movements are inherently related.

Goodenough (1931) studied the facial expressions of a ten-month-old child. Since the subject was an infant of ten months, it was "highly improbable that the character of the expression had been affected to any marked degree by social tradition" (p. 98). Emotional expressions such as astonishment, anger, pleasure, smiling, and fear were studied and considered to be native reactions. It was therefore concluded that certain emotions produce corresponding actions. Goodenough's study supports the view that emotions and body

movements are inherently related and that consequently certain communicative expressions are innate.

Tervoort (1961, p. 439), in his study of esoteric symbolism, defines the natural gestures as ". . . a concrete imitation of visual objects." He explains that the deaf child communicates by imitating with his body something he has seen or experienced. He further explains that "The natural gesture obtains its pattern from the visual object and the gesturing subject." Tervoort (1961, p. 441) also notes that ". . . the subject who makes the natural sign strives toward a close unity between the object and the sign as a basis for recognition." This study of esoteric symbolism seems to support the view that certain aspects of communication are innate.

The view that certain communicative action patterns are learned is supported by anthropological studies (Cratty, 1964, p. 67). "Anthropologists found long ago that people in various cultures use dissimilar gesture systems when expressing themselves." Cushing, in his study of the Zuni Indian sign language discovered that the more primitive the culture the greater the use of gestures for communication.

Cratty is the only source which attempted to relate the learned vs. the innate expressions. His explanation is given below.

> Movements which communicate may be either learned or innate, dependent upon the intensity of emotion directing them. The more intense emotional types of

> movement expressions are probably more instinctive, while actions which only communicate information are largely learned and related to the culture. (1964, p. 71)

> Although the instinctive vs. learned question is difficult to resolve in relation to movement communication, it seems that rather intense emotional states result in innate movements of the face and body which indicate fright or fear. On the other hand, less intense kinds of communicative behavior, which transmit information or add a dimension to verbal behavior, seem largely a learned product of the cultural setting. (1964, p. 68)

The Face: a Primary Medium of Communication

Some writers believe that a "Facial expression is capable of indicating a wide variety of emotional states about which words can only give rough hints; . . ." (Ruesch and Kees, 1956, p. 57) Ruesch and Kees contend that "Foremost among the body parts that have communicative value is the face." Levine and Groht (1955, p. 202) state that:

> Long before the hearing child speaks his first words, he is constantly referring to the human face for direction, guidance, approval and disapproval, and for learning--even for learning how to talk.

Several sources suggested that the eyes are a principal medium of communication. Feldman (1959, p. 197) explained that even though gestures are conveyed in visual, tactile, and olfactory ways, the principal medium of gesture communication is a visual one. From several of Birdwhistle's investigations, it has been suggested that there is a "cultural tendency for Americans to emphasize the eyes as a medium of communication." (Cratty, 1964, p. 70)

Spitz (1946), in his study of the causes of smiling

in infants, discovered that a smiling response was elicited in infants between the ages of three to six months when the human face or a similar configuration was presented to the infants. The configuration consisted of two eyes in combination with certain moving facial expressions such as nodding, sticking out the tongue, or some similar action.

Many writers consider the smiling response to be the criterion for the beginning of social interaction (Hurlock, 1964, p. 217). This statement suggests that communication begins with referral to the face.

Nonverbal Communication

Several sources suggested that nonverbal communication is vital to language development and a forerunner of speech; however, some writers seemed to differ in their recognition of nonverbal communication as a component of speech.

> Frank . . . suggests that the growing infant reacts first to signals, then to larger and more complex tactile cues, or signs, and later to symbols which indicate still more complex meanings. (Cratty, 1964, p. 71)

> It is quite generally agreed that the child understands gestures before he understands words, and in fact that he uses gestures himself long before he uses language proper. (McCarthy, 1946, p. 498)

Contradictory ideas existed in the literature concerning the age at which dependence upon nonverbal communication begins to decrease. Todd and Heffernan (1964, p. 382) state that, "Even at four and five years of age, a child's

behavior may be mostly overt, with a minimum of verbal communication;" whereas, in the study, Language Patterns of Preschoolers, Fisher (1934, p. 87) found that "By the beginning of the fifth year both boys and girls have acquired all the language patterns commonly used by adults in ordinary conversation." Todd and Heffernan (1964, p. 382) concluded that preschool communication is predominantly nonverbal; whereas, Fisher (1934, p. 84) found in the same study cited above that:

> The amount of non-verbal or incomprehensible speech decreased rapidly as age advanced up to the beginning of the fourth year, and then remained fairly constant, with approximately five remarks in every hundred still non-verbal.

Ruesch and Kees (1956, p. 17) explain that:

> Although speech gradually takes on more and more importance, communication mediated through action continues to be of significant importance until the child does not need the physical assistance of the adult any longer, because it is primarily for purposes of getting help that the child uses nonverbal communication. This stage is certainly not reached before the age of ten and perhaps closer to twelve or fourteen.

Hurlock (1964, p. 217) relates nonverbal communication to socio-economic status. She says that gestures are used more frequently by the lower groups, whereas the middle and upper groups regard gestures as socially inappropriate. She also states that:

> Intelligent children, who learn to speak at an early age, need gestures for a shorter period of time than the average child. In many cases, too, their parents come from the upper socio-economic groups . . .

> As speech improves, however, the need for gestures decreases. Before the child enters school, his vocabulary should be large enough to enable him to abandon the use of gestures entirely.

Ruesch and Kees (1956, p. 17) relate parental attitudes toward nonverbal communication to language and character development. They believe that:

> Difficulties arise when parents are not flexible in communicating nonverbally and fail to respond at each age level with appropriate motions. An impoverishment of communication and character development can be observed in those children who grew up in surroundings where the verbal was emphasized too early and where messages expressed in nonverbal terms were left unanswered.

Organization of the Remainder of the Thesis

In Chapter II a description of the children and the procedure are given. The relationship between the frequencies of the nonverbal communicative skills used by each of the two groups of children is described in Chapter III. In the final chapter, Chapter IV, a summary of the study is given and conclusions are drawn. Also included in the final chapter are recommendations for further study.

CHAPTER II

METHODS

There were five children in each of the two groups. The deaf children were students of the Eastern North Carolina School for the Deaf in Wilson, North Carolina. In the deaf group there were three girls and two boys. None of these children had multiple handicaps. They were considered normal except for their deafness. Deaf child 1 was a Negro girl born April 27, 1960; deaf child 2 was a Caucasian girl born March 21, 1960; deaf child 3 was a Caucasian boy born February 27, 1960; deaf child 4 was a Caucasian girl born March 20, 1960; and, deaf child 5 was a Caucasian boy born January 25, 1960.

Each child in the deaf group was considered to be born deaf. Each of these children had at least an 80 decibel loss of hearing in both ears. They have never heard the sounds of a single spoken word. According to their superintendent, until medical and/or educational technology provides a way to penetrate the barriers of an 80 decibel loss, these children will never hear words, and acquisition of language will be impossible.

The hearing children were students of the Parkway Church Kindergarten in Greensboro, North Carolina. In the

hearing group, there were three girls and two boys. They were considered to be normal five-year-old children. Hearing child 1 was a Caucasian girl born May 29, 1960; hearing child 2 was a Caucasian girl born February 23, 1960; hearing child 3 was a Caucasian girl born February 28, 1960; hearing child 4 was a Caucasian boy born January 25, 1960; and, hearing child 5 was a Caucasian boy born February 22, 1960.

There were seven five-year-old children without multiple handicaps at the School for the Deaf. Two of the seven children were absent due to illness, consequently the number of subjects available for study was five. The hearing subjects were matched to the deaf subjects as nearly as possible according to age and sex; consequently, the selection of the hearing subjects was determined by the age and sex of the five deaf subjects. The following represents the matched pairs: D 1 and H 1; D 2 and H 3; D 3 and H 5; D 4 and H 2; D 5 and H 4.

Each child was observed for a total of 120 minutes which consisted of eight 15 minute observations; four observations were during the indoor free play period, and four observations were during the outdoor free play period. The free play period was used because it was the least adult-directed period in the day's schedule; consequently, the children were less inhibited and had more freedom to communicate than at any other time during their day. The play

period lasted for one hour due to the factors of fatigue and short attention span of this age child.

The order of observation was randomized for both groups. Each group of five children was alphabetized and numbered from zero through four. Using a table of random numbers, the children were given a number indicating the sequence in which they were to be observed within the one hour observation period. Number five was the alternate for each period.

A score of one was recorded each time the observed child used a nonverbal communicative skill. The points were recorded on an observation record for each 15 minute observation. On the observation record, the skills were classified according to the following types of nonverbal communication: body expressions, facial expressions, feet expressions, hand expressions, head expressions, shoulder expressions, and other expressions. The body expressions included all those nonverbal skills in which the child utilized two or more distinct parts of the body at the same time. The facial expressions included: biting, blinking, blowing, extending tongue, frowning, grimacing, kissing, smiling, spitting, whistling, winking. The feet expressions included: pushing, shaking, tapping. The hand expressions included: clapping, counting, hitting, holding hands, hugging, hands on hips, pinching, pointing, pushing, scratching, shaking fist, shaping hands, tapping, waving,

withdrawing. The head expressions included: laughing, nodding, shaking head, turning head away. The shoulder expressions included hunching, shoving, shrugging. Each type of nonverbal communicative skill was interpreted either as a response or as initiating a response.

After the data had been collected, the frequencies were totaled and the totals were calculated for each child and for each of the two groups of children. The information is presented in the tables which are presented as Appendix B.

The total number of times each child used each of the six types of nonverbal communicative skills was determined. Frequency tables were drawn for each group and for each of the six types of nonverbal skills. The total frequencies of nonverbal communicative skills used as responses and to initiate responses during inside and outside free play were presented for the group of deaf children as well as the group of hearing children.

CHAPTER III

ANALYSIS OF THE DATA

The objectives of the study were to determine similarities and differences of nonverbal communicative skills used by deaf and hearing five-year-old children. The information in Appendix B and Table 1 indicate that the two groups of children did use the same types of nonverbal communicative skills with the exception of shoulder expressions and feet expressions.

Table 1

Total Frequencies of the Nonverbal Communicative Skills Used by Deaf and Hearing Children

Type of Communication	Deaf	Hearing
Body Expressions	305	264
Facial Expressions	351	296
Feet Expressions	4	5
Hand Expressions	1220	368
Head Expressions	286	101
Shoulder Expressions	0	9
	2166	1043

The hearing children used shoulder expressions nine times as an inside-response whereas the deaf children did not use

shoulder expressions during the observations unless they were used as part of a body expression. The deaf group used feet expressions four times whereas the hearing group used feet expressions five times; both groups used feet expressions about equally. The feet were used by both groups as part of body expressions more frequently than as isolated feet expressions.

There were two factors which may have accounted for the low frequency total for feet expressions and shoulder expressions. The children seemed to use their feet and shoulders as a component part of communicating with the whole body rather than as an isolated nonverbal expression. Consequently, the use of the feet and shoulders was often tallied as a body expression. Another reason which may have accounted for these two low totals is a simple and obvious one. There are only a few ways that the feet, and also the shoulders, can be used to convey a message; consequently, there were only three types of feet expressions--pushing, shaking and tapping; and, there were only three types of shoulder expressions--hunching, shoving, and shrugging. There were sixteen types of body expressions, eleven facial expressions, and fifteen hand expressions. There were only four types of head expressions; however, nodding is a universal nonverbal communicative skill and was used frequently by the children to answer yes or no and to indicate agreement or disagreement.

The information indicates support for the following belief: deaf and hearing children use the same types of nonverbal communicative skills.

A closely related belief was that deaf children use nonverbal communicative skills more frequently than hearing children. The total frequencies for each type of nonverbal expression for each of the two groups of children was given in Table 1. A comparison of the two groups showed that the deaf group used body, facial, hand and head expressions more frequently than did the hearing group of children. The deaf group used body expressions 305 times, whereas the hearing group used body expressions 264 times, a difference of 41. The deaf group used facial expressions 351 times, whereas the hearing group used facial expressions 296 times, a difference of 65. The deaf group used hand expressions 1220 times, whereas the hearing group used hand expressions 368 times, a difference of 852. The deaf group used head expressions 286 times whereas the hearing group used head expressions 101 times, a difference of 185. The deaf children used nonverbal communicative skills more than twice as many times as the hearing children; the total for the deaf group was 2166, whereas for the hearing group the total was 1043, a difference of 1123. It seems apparent that the major factor influencing this difference was the frequent use of hand expressions by the deaf group; they used hand expressions 852 more times than the hearing group.

This difference accounts for more than 75% of the total difference between the two groups of children.

The information in Table 1 indicated a trend in the direction of support for the following beliefs: deaf and hearing children use the same types of skills; however, deaf children use nonverbal communicative skills more frequently than hearing children.

The information presented in Table 2 indicated that both groups used nonverbal skills as a response more frequently than to initiate a response.

Table 2

Total Frequencies of the Nonverbal Communicative Skills Used as a Response and to Initiate a Response by Deaf and Hearing Children

Type of Communication	Deaf		Hearing	
	Response	Initiate	Response	Initiate
Body Expressions	224	81	199	65
Facial Expressions	262	89	237	59
Feet Expressions	4	0	2	3
Hand Expressions	863	357	174	194
Head Expressions	240	46	79	22
Shoulder Expressions	0	0	9	0
	1593	573	700	343

Note - The deaf group used nonverbal communicative skills 2166 times. The hearing group used nonverbal communicative skills 1043 times.

With the exception of feet expressions for the hearing group, the response total was greater than the initiate-response total for each type of skill. The deaf children

responded nonverbally 1593 times, whereas they initiated a response 573 times, a difference of 1020. The hearing group responded nonverbally 700 times whereas they initiated a response 343 times, a difference of 357. The deaf children responded nonverbally three times more often than they nonverbally initiated a response. The hearing children responded nonverbally twice as often as they nonverbally initiated a response. The results seem to indicate a trend in the direction of support for the following belief: deaf and hearing children use nonverbal communicative skills as a response more frequently than to initiate a response.

The information given in Table 3 indicates that the deaf group used nonverbal communicative skills to initiate a response more frequently than did the hearing group.

Table 3

Total Frequencies of the Nonverbal Communicative Skills Used to Initiate a Response by Deaf and Hearing Children

Type of Communication	Deaf	Hearing
Body Expressions	81	65
Facial Expressions	89	59
Feet Expressions	0	3
Hand Expressions	357	194
Head Expressions	46	22
Shoulder Expressions	0	0
	573	343

With the exception of feet and shoulder expressions, the deaf totals were greater than the hearing totals for nonverbally initiating a response. The deaf children nonverbally initiated a response 573 times whereas the hearing children nonverbally initiated a response 343 times, a difference of 230. The information given in Table 3 seems to indicate a trend in the direction of support for the following belief: deaf children use nonverbal skills to initiate a response more frequently than do hearing children.

It was the belief of the writer that deaf children use body expressions more frequently than any other type of nonverbal communicative skill. A closely related belief was that for deaf children, the descending order for using nonverbal communicative skills would occur in the following pattern: body, hand, facial, shoulder, head, and feet. The results given in Table 4 did not offer support for these beliefs. The deaf group used head expressions 286 times,

Table 4

Frequency of Scores for Deaf and Hearing Children

Deaf		Hearing	
Hand	1220	Hand	368
Facial	351	Facial	296
Body	305	Body	264
Head	286	Head	101
Feet	4	Shoulder	9
Shoulder	0	Feet	5

body expressions 305 times, facial expressions 351 times, and hand expressions 1220 times. The deaf children used hand expressions more frequently than any other type of nonverbal communicative skill. For the deaf group, the descending order for using nonverbal communicative skills occurred in the following pattern: hand, facial, body, head, feet, and shoulder.

Another belief of the writer was that hearing children use hand expressions more frequently than any other type of nonverbal communicative skill. A closely related belief was that for hearing children, the descending order for using nonverbal communicative skills would occur in the following pattern: hand, head, body, facial, shoulder, and feet. The hearing group used head expressions 101 times, body expressions 264 times, facial expressions 296 times, and hand expressions 368 times. The hearing group did use hand expressions more frequently than any other type of nonverbal communicative skill. However, the descending order for using nonverbal communicative skills occurred in the following pattern: hand, facial, body, head, shoulder and feet. The information presented in Table 4 seems to support the belief that hearing children use hand expressions more frequently than any other type of nonverbal communicative skill. However, the information in Table 4 did not completely support the belief concerning the order for using nonverbal communicative skills for hearing children.

In Table 4, a comparison of the two groups indicated that both the deaf and hearing children used hand expressions more frequently than any other type of nonverbal communicative skill. For the first four types of skills, both groups used nonverbal communicative skills in the following descending order: hand, facial, body, head. The information in Table 4 seems to indicate support for the following conclusions: deaf and hearing five-year-old children use hand expressions more frequently than any other type of nonverbal communicative skill; deaf and hearing five-year-old children use the following types of nonverbal communicative skills in the following descending order: hand, facial, body and head.

Tables 5-10 are comparative representations of the number of times each of the two groups of children used the nonverbal communicative skills during their inside and outside free play. A table was constructed for each of the six types of skills. In each table, there are five cells for the deaf group and five cells for the hearing group. The numbers represent the following information for each group: inside-response, inside-initiate a response, outside-response, outside-initiate a response, total frequency of the particular expression represented.

Body Expression Frequencies

The information in Table 5 represents the body expression frequencies.

Table 5

Frequencies of Use of Body Expressions by Deaf and Hearing Children

Group	Inside		Outside		Total
	Response	Initiate	Response	Initiate	
Deaf	87	30	137	51	305
Hearing	69	17	130	48	264

During inside free play, the deaf group used body expressions to respond 87 times and to initiate a response 30 times, a difference of 57. The deaf group used body expressions almost three times more frequently to respond than to initiate a response during inside free play. The hearing group used body expressions 69 times to respond and 17 times to initiate a response, a difference of 52. The hearing group used body expressions four times more frequently to respond than to initiate a response during inside free play.

During the inside free play, the deaf group used body expressions to respond nonverbally 87 times, whereas the hearing group responded with their bodies 69 times, a difference of 18. The deaf group used body expressions to initiate a response 30 times, whereas the hearing group used body expressions to initiate nonverbally a response 17 times, a difference of 13. The deaf group used body

expressions nearly twice as many times as the hearing group to initiate a response during inside free play.

During outside free play, the deaf group used body expressions to respond 137 times and to initiate a response 51 times, a difference of 86. The deaf group used body expressions nearly three times more often to respond than to initiate a response during outside free play. The hearing group used body expressions 130 times to respond and 48 times to initiate a response, a difference of 82. The hearing group used body expressions nearly three times more often to respond than to initiate a response during outside free play.

During outside free play, the deaf group used body expressions to respond nonverbally 137 times, whereas the hearing group responded with their bodies 130 times; the deaf group used body expressions to respond only 7 more times than the hearing group during outside free play. The deaf group used body expressions to initiate a response 51 times, whereas the hearing group used body expressions to initiate nonverbally a response 48 times; the deaf group used body expressions to initiate a response only 3 more times than the hearing group during outside free play.

The deaf children used body expressions 305 times to communicate nonverbally, whereas the hearing children used body expressions 264 times, a difference of 41. Both groups of children used body expressions to respond more frequently

than to initiate a response. Both groups used body expressions more frequently to communicate nonverbally during outside free play than during inside free play.

Facial Expression Frequencies

The information in Table 6 represents the facial expression frequencies.

Table 6

Frequencies of Use of Facial Expressions by Deaf and Hearing Children

Group	Inside		Outside		Total
	Response	Initiate	Response	Initiate	
Deaf	153	64	109	25	351
Hearing	128	33	109	26	296

During inside free play, the deaf group used facial expressions to respond 153 times and to initiate a response 64 times, a difference of 89. The deaf group used facial expressions more than twice as many times to respond than to initiate a response during inside free play. The hearing group used facial expressions 128 times to respond and 33 times to initiate a response, a difference of 95. The hearing group used facial expressions nearly four times more frequently to respond than to initiate a response during inside free play.

During the inside free play, the deaf group used facial expressions to respond nonverbally 153 times, whereas

the hearing group responded with facial expressions 128 times, a difference of 25. The deaf group used facial expressions to initiate a response 64 times, whereas the hearing group used facial expressions to initiate response 33 times, a difference of 31. The deaf group used facial expressions nearly twice as many times as the hearing group to initiate a response during inside free play.

During outside free play, the deaf group used facial expressions to respond 109 times and to initiate a response 25 times, a difference of 84. The deaf group used facial expressions more than four times more frequently to respond than to initiate a response during outside free play. The hearing group used facial expressions 109 times to respond and 26 times to initiate a response, a difference of 83. The hearing group used facial expressions more than four times more often to respond than to initiate a response during outside free play.

During outside free play, each group of children used facial expressions to respond 109 times. The deaf group used facial expressions to initiate a response 25 times; the hearing group used facial expressions to initiate non-verbally a response 26 times. The hearing group used facial expressions only one more time than the deaf group to initiate a response during outside free play. Both groups of children used facial expressions the same number of times to respond nonverbally during free play outside the building.

The deaf children used facial expressions 351 times to communicate nonverbally, whereas the hearing children used facial expressions 296 times, a difference of 55. Both groups of children used facial expressions to respond more frequently than to initiate a response. Both groups used facial expressions more frequently to communicate nonverbally during inside free play than during outside free play.

Feet Expression Frequencies

The information in Table 7 represents the feet expression frequencies.

Table 7

Frequencies of Use of Feet Expressions by Deaf and Hearing Children

Group	Inside		Outside		Total
	Response	Initiate	Response	Initiate	
Deaf	4	0	0	0	4
Hearing	2	2	0	1	5

The deaf group used feet expressions as a nonverbal response 4 times during inside free play. The hearing group used feet expressions as a response 2 times and to initiate a response 2 times during inside free play. Both groups used feet expression about equally. Factors which may have accounted for the low frequency total for feet expressions were given in the analysis of Table 1.

Hand Expression Frequencies

The information in Table 8 represents the hand expression frequencies.

Table 8

Frequencies of Use of Hand Expressions by Deaf and Hearing Children

Group	Inside		Outside		Total
	Response	Initiate	Response	Initiate	
Deaf	514	200	349	157	1220
Hearing	83	73	91	121	368

During inside free play, the deaf group used hand expressions to respond 514 times and to initiate a response 200 times, a difference of 314. The deaf group used hand expressions more than 2 1/2 times more frequently to respond than to initiate a response during inside free play. The hearing group used hand expressions 83 times to respond and 73 times to initiate a response; the hearing group used their hands to respond 10 more times than to initiate a response during inside free play.

During inside free play, the deaf group used hand expressions to respond nonverbally 514 times, whereas the hearing group used hand expressions to respond nonverbally 83 times, a difference of 431. The deaf group used their hands to respond more than six times more often than did the hearing group during inside free play. The deaf group

used hand expressions to initiate a response 200 times, whereas the hearing group used hand expressions to nonverbally initiate a response 73 times, a difference of 127. The deaf group used hand expressions nearly three times more frequently than did the hearing group during inside free play.

During outside free play, the deaf group used hand expressions to respond 349 times and to initiate a response 157 times, a difference of 192. The deaf group used hand expressions more than twice as often to respond as to initiate a response during outside free play. The hearing group used hand expressions 91 times to respond and 121 times to initiate a response, a difference of 30. The hearing group used hand expressions more frequently to initiate a response than as a response during outside free play.

During outside free play, the deaf group used hand expressions as a nonverbal response 349 times, whereas the hearing group responded with their hands 91 times, a difference of 238. The deaf group used hand expressions to respond more than four times as frequently as did the hearing group during outside play period. The deaf group used hand expressions to initiate a response 157 times, whereas the hearing group used hand expressions to initiate a response 121 times, a difference of 36.

The deaf children used hand expressions 1220 times

to communicate nonverbally, whereas the hearing children used hand expressions 368 times, a difference of 852. The deaf group used hand expressions nearly four times more frequently to communicate with their peers during free play. Both groups of children used hand expressions to respond more frequently than to initiate a response during inside free play. The deaf group used hand expressions to respond more frequently than to initiate a response during outside free play; the hearing group, however, used hand expressions to initiate a response more frequently than as a response during their outside free play with their peers. The deaf children used hand expressions more frequently to communicate during inside free play than during outside free play. The hearing children, however, used hand expressions more frequently during outside free play than during inside free play.

Head Expression Frequencies

The information in Table 9 represents the head expression frequencies. During inside free play, the deaf

Table 9

Frequencies of Use of Head Expression by Deaf and Hearing Children

Group	Inside		Outside		Total
	Response	Initiate	Response	Initiate	
Deaf	127	19	113	27	286
Hearing	56	13	23	9	101

group used head expressions to respond 127 times and to initiate a response 19 times, a difference of 108. The deaf group used head expressions more than six times more frequently to respond than to initiate a response during the inside free play. The hearing group used head expressions 56 times to respond and 13 times to initiate a response, a difference of 43. The hearing group used head expressions more than four times more frequently to respond than to initiate a response during inside free play.

During the inside free play, the deaf group used head expressions to respond nonverbally 127 times, whereas the hearing group responded with their heads 56 times, a difference of 71. The deaf group used head expressions twice as often to respond as did the hearing group. The deaf group used head expressions to initiate a response 19 times, whereas the hearing group used head expressions to initiate a response 13 times. The deaf group used head expressions only 6 times more than did the hearing group to initiate a response during inside free play.

During outside free play, the deaf group used head expressions to respond 113 times and to initiate a response 27 times, a difference of 86. The deaf group used head expressions nearly four times more often to respond than to initiate a response during outside free play. The hearing group used head expressions 23 times to respond and 9 times to initiate a response, a difference of 14. The deaf group

used head expressions nearly twice as often to respond as to initiate a response during outside free play.

During outside free play, the deaf group used head expressions to respond 113 times, whereas the hearing group responded with their heads 23 times, a difference of 90. The deaf group used head expressions to respond nearly five times more often than did the hearing group during outside free play. The deaf group used head expressions to initiate a response 27 times, whereas the hearing group used head expressions to initiate a response 9 times, a difference of 18. The deaf group used head expressions to initiate a response three times more frequently than the hearing group during outside free play.

The deaf children used head expressions a total of 286 times to communicate nonverbally, whereas the hearing children used head expressions 101 times, a difference of 185. The deaf group used head expressions more than 2 1/2 times more often than the hearing group to communicate nonverbally with peers during free play. Both groups of children used head expressions to respond more frequently than to initiate a response. Both groups used head expressions more frequently during inside free play than during outside free play; although, with the deaf children, the difference was smaller.

Shoulder Expression Frequencies

The information in Table 10 represents the shoulder expression frequencies.

Table 10

Frequencies of Use of Shoulder Expressions by Deaf and Hearing Children

Group	Inside		Outside		Total
	Response	Initiate	Response	Initiate	
Deaf	0	0	0	0	0
Hearing	9	0	0	0	9

During inside free play, the deaf group did not use shoulder expressions to respond or to initiate a response. The hearing group used shoulder expressions to respond only 9 times; however, the hearing group did not use shoulder expressions to initiate a response during inside free play. Shoulder expressions were not used during outside free play. Factors which may have accounted for the low frequency total for shoulder expressions were given in the analysis of Table 1.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

This study was planned as a means of gaining an increased understanding of nonverbal communicative skills used by preschool children. From the experience of the writer, it seemed that both deaf and hearing five-year-old children might use similar nonverbal communicative skills and similar techniques of interaction during free play. Therefore, this study of the similarities and differences between deaf and hearing five-year-old children was undertaken. Child-centered leadership in free play was of interest rather than group situations structured by adults.

The problem was a comparative study of the nonverbal communicative skills with peers, used by deaf and hearing five-year-old children during their inside and outside free play periods. The writer assumed that five-year-old children use nonverbal communicative skills; however, five-year-old children differ in the ways that they use nonverbal communicative skills. The purpose of the study was to determine similarities and differences of nonverbal communicative skills used by deaf and hearing five-year-old children.

There were five children in each of the two groups, three girls and two boys. The deaf children were students of the Eastern North Carolina School for the Deaf in Wilson, North Carolina. These children were considered to be normal except for their deafness.

The hearing children were students of Greensboro's Parkway Baptist Church Kindergarten. They were considered to be normal five-year-old children. The two groups of children were matched according to age and sex.

Each of the ten children was observed for 120 minutes which consisted of eight 15 minute observations; four were taken during the indoor free play period and four were taken during the outdoor free play period. The play period lasted for one hour. The order of observation was randomized for each group.

A score of one was recorded each time the observed child used a nonverbal communicative skill. On the observation record the skills were classified either as body, facial, feet, hand, head or shoulder expressions. Each type of nonverbal communicative skill was interpreted either as a response or as initiating a response.

After eight 15-minute observations had been completed on each of the ten children, the frequencies were totaled and the totals were calculated for each child and for each of the two groups of children. The information is presented in the tables which are given in Appendix B. The

relationship between the frequencies of use of the six skills for each of the two groups of children was analyzed descriptively.

The limitations of the study were the following:

1. There were only five children in each of the two groups.

2. The free play period lasted for only one hour.

3. The children were observed in a group setting.

4. The children were accustomed to teacher direction during the free play period.

5. There were only four observations during inside free play and four during outside free play.

Conclusions

This researcher has attempted to give a simple, straightforward description in reporting the present study. The subjects do not constitute a random sample, therefore statistical inference cannot be made. Nevertheless, as applied to the two groups observed, the present study of nonverbal communication seems to offer support for the following statements:

1. These deaf and hearing five-year-old children used the same types of nonverbal communicative skills; however, deaf children used nonverbal communicative skills more frequently than did the hearing children.

2. These deaf and hearing five-year-old children used nonverbal communicative skills as a response more

frequently than to initiate a response.

3. These deaf five-year-old children used nonverbal communicative skills to initiate a response more frequently than did the hearing five-year-old children.

4. These deaf and hearing five-year-old children used hand expressions more frequently than any other type of nonverbal communicative skill, however, deaf five-year-old children used hand expressions more frequently than did hearing five-year-old children.

5. These deaf and hearing five-year-old children used body expressions to respond more frequently than to initiate a response.

6. These deaf and hearing five-year-old children used body expressions more frequently to communicate nonverbally during outside free play than during inside free play.

7. These deaf and hearing five-year-old children used facial expressions to respond more frequently than to initiate a response.

8. These deaf and hearing five-year-old children used facial expressions more frequently to communicate nonverbally during inside free play than during outside free play.

9. These deaf five-year-old children used hand expressions more frequently to communicate nonverbally during inside free play than during outside free play; the

hearing children, however, used hand expressions more frequently during outside free play than during inside free play.

10. These deaf and hearing five-year-old children used head expressions more frequently during inside free play than during outside free play to communicate nonverbally with their peers.

Recommendations

It is recommended that further research be planned in the area of communication. An increased understanding of verbal as well as nonverbal communication is needed. A replication of the present study would be of value; especially if factors in addition to age and sex were used or if random samples of the deaf and hearing five-year-old population, and an evaluation by statistical inference were possible. The present study also might be replicated using several observers and determining the reliability of their recording.

After the experience of the present study, this researcher believes that teachers of hearing five-year-old children tend to emphasize nonverbal communication whereas teachers of deaf children tend to emphasize verbal communication. A comparative study of the teacher techniques used to communicate with deaf and hearing children would be of value.

A further study might be made to compare the

communicative skills used by blind, deaf, and hearing children. A study of this type might further define the question of which nonverbal communicative skills are learned and which are innate.

A study might be made to compare the similarities and differences of the communicative skills used by institutionalized children with those skills used by non-institutionalized children.

A study investigating the techniques of interaction in families in which there were both deaf and hearing siblings might contribute to a better understanding of parent education for the parents of deaf children.

Another study of value would be to investigate the present norms of communicative skills for preschool children and thus contribute to a better understanding of the communicative capabilities of this age.

Man has been communicating in one form or another since the beginning of his social interactions. Recently communication has become an area of investigation. The information, however, remains limited, and studies concerning verbal as well as nonverbal communicative skills are scant.

As civilization advances communicative needs of man change; consequently communication is an area in which research studies should continually be developed.

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APPENDIX A

OBSERVATION RECORD
NONVERBAL COMMUNICATIVE SKILLS

NAME_____GROUP____DATE_____TIME____RECORDER_____

	Response	Initiate a Response
A. Body Expressions		
Crying		
Hugging		
Jumping		
Kicking		
Laughing		
Pointing		
Prancing		
Pushing		
Running		
Shaking		
Skipping		
Stamping		
Turning away		
Walking		
Whining		
Withdrawing		
B. Facial Expressions		
Biting		
Blinking		
Blowing		
Extending tongue		
Frowning		
Grimacing		
Kissing		
Smiling		
Spitting		
Whistling		
Winking		
C. Feet Expressions		
Pushing		
Shaking		
Tapping		
D. Hand Expressions		
Clapping		
Counting		
Hitting		
Holding Hands		
Hugging		

Response Initiate a Response

Hands on hips_____
Pinching_____
Pointing_____
Pushing_____
Scratching_____
Shaking fist_____
Shaping hands_____
Tapping hands_____
Waving_____
Withdrawing_____

E. Head Expressions
Laughing_____
Nodding_____
Shaking head_____
Turning head away_____

F. Shoulder Expressions
Hunching_____
Shoving_____
Shrugging_____

G. Other Expressions
_____
_____
_____
_____
_____
_____
_____
_____

APPENDIX B

Table 11

Nonverbal Communicative Skills
Used by Five Deaf Children

Type of Communication	Inside		Outside		Row Totals
	Response	Initiate	Response	Initiate	
Body Expressions	87	30	137	51	305
Facial Expressions	153	64	109	25	351
Feet Expressions	4	0	0	0	4
Hand Expressions	514	200	349	157	1220
Head Expressions	127	19	113	27	286
Shoulder Expressions	0	0	0	0	0
Column Totals	885	313	708	260	2166

Table 12

Nonverbal Communicative Skills
Used by Five Hearing Children

Type of Communication	Inside		Outside		Row Totals
	Response	Initiate	Response	Initiate	
Body Expressions	69	17	130	48	264
Facial Expressions	128	33	109	26	296
Feet Expressions	2	2	0	1	5
Hand Expressions	83	73	91	121	368
Head Expressions	56	13	23	9	101
Shoulder Expressions	9	0	0	0	9
Column Totals	347	138	353	205	1043

Table 13

Nonverbal Communicative Skills
Used by Deaf Child 1

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	14	4	39	10
Facial Expressions	31	15	40	10
Feet Expressions	0	0	0	0
Hand Expressions	99	46	98	52
Head Expressions	2	1	19	2
Shoulder Expressions	0	0	0	0
Other	0	0	0	0

Table 14

Nonverbal Communicative Skills
Used by Deaf Child 2

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	15	2	4	3
Facial Expressions	26	11	11	2
Feet Expressions	0	0	0	0
Hand Expressions	122	54	59	29
Head Expressions	29	4	2	0
Shoulder Expressions	0	0	0	0
Other	0	0	0	0

Table 15

Nonverbal Communicative Skills
Used by Deaf Child 3

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	30	9	60	21
Facial Expressions	53	15	21	6
Feet Expressions	0	0	0	0
Hand Expressions	152	48	78	25
Head Expressions	43	8	34	8
Shoulder Expressions	0	0	0	0
Other	0	0	0	0

Table 16

Nonverbal Communicative Skills
Used by Deaf Child 4

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	10	1	27	6
Facial Expressions	21	9	11	1
Feet Expressions	4	0	0	0
Hand Expressions	84	28	82	27
Head Expressions	21	2	21	7
Shoulder Expressions	0	0	0	0
Other	0	0	0	0

Table 17

Nonverbal Communicative Skills
Used by Deaf Child 5

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	18	14	7	11
Facial Expressions	22	14	26	6
Feet Expressions	0	0	0	0
Hand Expressions	57	24	32	24
Head Expressions	22	4	37	10
Shoulder Expressions	0	0	0	0
Other	0	0	0	0

Table 18

Nonverbal Communicative Skills
Used by Hearing Child 1

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	0	0	3	2
Facial Expressions	29	5	10	2
Feet Expressions	0	0	0	0
Hand Expressions	3	5	1	2
Head Expressions	11	0	2	0
Shoulder Expressions	0	0	0	0
Other	0	0	0	0

Table 19

Nonverbal Communicative Skills
Used by Hearing Child 2

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	12	1	31	11
Facial Expressions	29	7	31	8
Feet Expressions	0	0	0	0
Hand Expressions	24	15	14	16
Head Expressions	25	0	2	0
Shoulder Expressions	3	0	0	0
Other	0	0	0	0

Table 20

Nonverbal Communicative Skills
Used by Hearing Child 3

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	21	3	18	1
Facial Expressions	26	7	18	3
Feet Expressions	0	0	0	0
Hand Expressions	14	14	22	26
Head Expressions	7	3	3	0
Shoulder Expressions	4	0	0	0
Other	0	0	0	0

Table 21

Nonverbal Communicative Skills
Used by Hearing Child 4

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	25	9	49	26
Facial Expressions	21	7	13	4
Feet Expressions	2	2	0	1
Hand Expressions	27	28	35	38
Head Expressions	7	6	5	0
Shoulder Expressions	0	0	0	0
Other	0	0	0	0

Table 22

Nonverbal Communicative Skills
Used by Hearing Child 5

Type of Communication	Inside		Outside	
	Response	Initiate	Response	Initiate
Body Expressions	11	4	29	8
Facial Expressions	23	7	37	9
Feet Expressions	0	0	0	0
Hand Expressions	15	11	19	39
Head Expressions	7	3	11	9
Shoulder Expressions	2	0	0	0
Other	0	0	0	0